

REMARKS

Claims 1-20 remain pending in this application. Claims 1, 2, 10, 11, 15, 19 and 20 are amended. Claims 3-9, 12-14 and 16-18 remain unchanged.

Specification

The specification was objected to because the title had some letters missing. The specification has been amended to include a replacement title as suggested by the Examiner. Applicants respectfully propose that the objection has been overcome.

Abstract

The abstract was objected to because it contained a title. The abstract has been amended to remove the title. Applicants respectfully propose that the objection has been overcome.

35 U.S.C. §103

Claims 1, 4-7, 10 and 13-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Wang et al. (US 6,266,365) in view of Lewis (US 2003/0231705). Under U.S.C. § 103, the prior art reference (or references when combined) must teach or suggest all of the claim limitations (MPEP § 706.02(j)).

Claim 1 is amended to recite, inter alia, "An apparatus for performing a correlation with respect to a received signal, the apparatus comprising...logic that combines a frequency adjustment signal that is derived from the first real correlated signal, a frequency adjustment signal that is derived from the first imaginary correlated signal, the second real correlated signal and the second imaginary correlated signal to produce a real part of a frequency adjusted signal and an imaginary part of the frequency adjusted signal." Support for the amendment is found, among other places, on page 6, lines 12-16 and page 7, lines 9-14 of applicants' specification as well as in Fig. 2A.

The "logic that combines a frequency adjustment signal that is derived from the first real correlated signal, a frequency adjustment signal that is derived from the first imaginary correlated signal, the second real correlated signal and the second imaginary

correlated signal to produce a real part of a frequency adjusted signal and an imaginary part of the frequency adjusted signal” recitation of amended claim 1 is an important aspect of applicants’ invention. As discussed on page 1 of applicants’ specification (page 1, line 24 to page 2, line 2):

In processing received CDMA signals, it may be difficult to detect long symbols in the presence of a frequency offset. Because the chips (each chip is equal to one bit in a spreading code) that make up a symbol may tend to rotate in the presence of a frequency offset, it is possible for the chips to rotate completely around the complex plane during the integration period of one symbol. When this happens, the chips may destructively combine to produce a very small correlation peak. One method may be to solve this problem may be to implement a frequency synchronization block in hardware, but such solutions may be undesirably expensive in order to be able to tolerate higher frequency offsets. Absent more expensive hardware solutions, a receiver may only be able to detect long symbols in the presence of relatively low frequency offsets. An improved method and apparatus for the detection of long symbols in the presence of a relatively high frequency offset is desirable.

In other words, having “logic that combines a frequency adjustment signal that is derived from the first real correlated signal, a frequency adjustment signal that is derived from the first imaginary correlated signal, the second real correlated signal and the second imaginary correlated signal to produce a real part of a frequency adjusted signal and an imaginary part of the frequency adjusted signal” overcomes the problem of detecting or correlating long symbols in the presence of a frequency offset since the combination of the frequency adjustment signal, derived from the first correlated signal, with the second correlation signal reduces and/or removes the frequency offset from the second correlated signal. Indeed, this benefit is further discussed in applicants’ specification on page 6, lines 12-16:

The Secondary SCH correlation block 100 may use the output of a correlation for the Primary SCH channel to derive a frequency adjustment that is applied prior to the second stage of correlation for the Secondary SCH channel. Thus, the Secondary SCH detection algorithm may work under much higher frequency offsets than would otherwise be possible.

In the office action, Wang (on column 5, lines 27-44) is described as teaching “logic that combines a signal that corresponds to the first real correlated signal, a signal that corresponds to the first imaginary correlated signal, the second real correlated signal and the second imaginary correlated signal *to produce a real part of a frequency*

adjusted signal and an imaginary part of the frequency adjusted signal.” (emphasis added). Applicants respectfully disagree, the cited section of Wang does not appear to disclose producing a real part of a frequency adjusted signal and an imaginary part of the frequency adjusted signal let alone the “logic that combines a frequency adjustment signal that is derived from the first real correlated signal, a frequency adjustment signal that is derived from the first imaginary correlated signal, the second real correlated signal and the second imaginary correlated signal *to produce a real part of a frequency adjusted signal and an imaginary part of the frequency adjusted signal*” recitation of amended claim 1.

In the office action, Lewis (on page 2, paragraph 15, lines 15-35 and page 4, paragraph 24) is described as teaching Golay correlators for correlating a signal having first and second characteristics (i.e., Primary and Secondary code words). However, similarly to Wang, Lewis does not appear to does not appear to disclose producing a real part of a frequency adjusted signal and an imaginary part of the frequency adjusted signal let alone the “logic that combines a frequency adjustment signal that is derived from the first real correlated signal, a frequency adjustment signal that is derived from the first imaginary correlated signal, the second real correlated signal and the second imaginary correlated signal *to produce a real part of a frequency adjusted signal and an imaginary part of the frequency adjusted signal*” recitation of amended claim 1.

As a result, neither Wang nor Lewis, either alone or combined teach the “logic that combines a frequency adjustment signal that is derived from the first real correlated signal, a frequency adjustment signal that is derived from the first imaginary correlated signal, the second real correlated signal and the second imaginary correlated signal *to produce a real part of a frequency adjusted signal and an imaginary part of the frequency adjusted signal*” limitation of amended claim 1. Therefore, it is respectfully proposed that the rejection of amended claim 1 under 35 U.S.C. § 103(a) is overcome in accordance with the above amendment and remarks and notice to that effect is earnestly solicited.

Claims 4-7 depend from amended claim 1 or depend from claims depending from amended claim 1, should therefore also be allowable for the same reasons, as well as for the additional recitation contained therein. Applicants respectfully requests reconsideration of the rejection of the claims in view of the above remarks.

Independent claim 10 is amended to include elements similar to the elements of amended independent claim 1 and should therefore be allowable for the same reasons discussed above as well as for the additional recitations contained therein. Therefore, it is respectfully proposed that the rejection for obviousness is overcome. Claims 13 and 14 being dependent on and further limiting independent claim 10, should be allowable for that reason, as well as for the additional recitations contained therein. Applicants respectfully requests reconsideration of the rejection of the claims in view of the above remarks.

Independent claim 15 is amended to include elements similar to the elements of amended independent claim 1 and should therefore be allowable for the same reasons discussed above as well as for the additional recitations contained therein. Therefore, it is respectfully proposed that the rejection for obviousness is overcome. Claims 16-20 being dependent on and further limiting independent claim 10, should be allowable for that reason, as well as for the additional recitations contained therein. Applicants respectfully requests reconsideration of the rejection of the claims in view of the above remarks.

Claims 2, 3, 11 and 12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Wang et al. (US 6,266,365) in view of Lewis (US 2003/0231705) and further in view of Molnar (US 6,298,227).

Claims 2 and 3 depend from amended claim 1 or depend from claims depending from amended claim 1, should therefore also be allowable for the same reasons, as well as for the additional recitation contained therein. Applicants respectfully requests reconsideration of the rejection of the claims in view of the above remarks.

Claims 11 and 12 depend from amended claim 10 or depend from claims depending from amended claim 10, should therefore also be allowable for the same reasons, as well as for the additional recitation contained therein. Applicants respectfully requests reconsideration of the rejection of the claims in view of the above remarks.

Having fully addressed the Examiner's rejections it is believed that, in view of the preceding amendments and remarks, this application stands in condition for allowance. Accordingly then, reconsideration and allowance are respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, the

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Examiner is invited to contact the applicant's attorney at (818) 260-3727, so that a mutually convenient date and time for a telephonic interview may be scheduled.

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No fee is believe due other than the fee for the three-month extension of time.
However, if an additional fee is due, please charge the additional fee to Deposit
Account 07-0832.

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